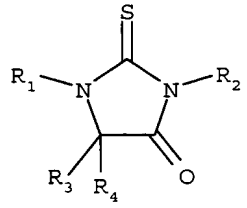
CLAIMS

1. Compound derived from 2-thiohydantoin, characterized in that it is selected from:

a) compounds of the formula

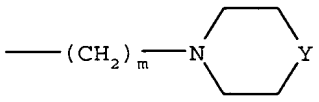


(I)

in which

· R_1 or R_2 each independently is

- a linear, branched or cyclic C_1-C_5 alkyl group,
- a C_3-C_4 alkenyl group,
- a C_2-C_3 hydroxyalkyl group or one of its precursor groups,
- a C_3-C_5 alkoxyalkyl group,
- a CH_2-$COOCH_3$ group,
- an N,N-dialkylaminoalkyl group,
- a group

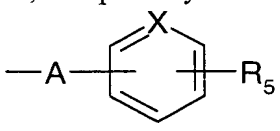


in which m is 2 or 3 and Y is O or N-CH_3,

- a dibenzofuranyl group, or
- a group $(CH_2)_p$-Ar, in which

p is 0 or 1, and

Ar is a phenyl or pyridinyl aromatic ring that is unsubstituted or substituted by one or more atoms or groups of atoms selected from halogens, C_1-C_4 alkyl, hydroxyl, nitro, C_1-C_3 alkoxy, methylenedioxy, SCH_3, free or esterified carboxylic acid, trifluoromethyl, trifluoromethoxy, cyano, morpholinyl and



in which

A is O, S, CH_2, OCH_2 or CH_2O,

X is CH or N, and

R_5 is a hydrogen atom, a halogen atom, an N,N-dialkylamino group, a C_1-C_4 alkyl group, a C_1-C_3 alkoxy group, a hydroxyl group that is free or esterified by an amino acid, or a carboxyl or alkoxy(C_1-C_4)carbonyl group;

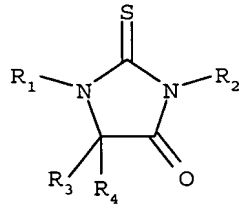
- R_3 is a hydrogen atom, a halogen atom, a C_1-C_4 alkyl group, a C_1-C_4 alkoxy group, a hydroxyl group, a phenyl group or a benzyl group; and
- R_4 is a hydrogen atom, a halogen atom or a C_1-C_4 alkyl group,

with the proviso that at least one of the substituents R_1 and R_2 comprises in its structure 2 aromatic rings selected from phenyl and pyridinyl groups, the dibenzofuranyl group being considered here as comprising 2 aromatic rings; and

b) addition salts of the compounds of formula (I) with a non-toxic acid if said compounds of formula (I) comprise a salifiable basic group.

2. Compound derived from 2-thiohydantoin, characterized in that it is selected from:

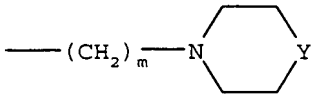
a) compounds of the formula



(I)

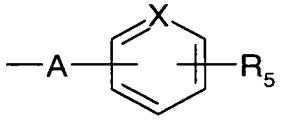
in which

- R_1 and R_2 independently of one another are
  - a C_1-C_5 alkyl group,
  - a C_3-C_4 alkenyl group,
  - a C_2-C_3 hydroxyalkyl group,
  - a C_3-C_5 alkoxyalkyl group,
  - a CH_2-$COOCH_3$ group,
  - an N,N-dialkylaminoalkyl group,
  - a group



in which m is 2 or 3 and Y is O or N-CH_3,

- a dibenzofuranyl group, or
- a group $(CH_2)_p$-Ar in which
- p is 0 or 1, and
- Ar is a phenyl or pyridinyl aromatic ring that is unsubstituted or substituted by one or more atoms or groups of atoms selected from halogens, C_1-C_4 alkyl, hydroxyl, nitro, C_1-C_3 alkoxy, methylenedioxy, ester, trifluoromethyl, trifluoromethoxy, cyano, morpholinyl and the group



in which

- A is O or S,
- X is CH or N, and
- R_5 is a hydrogen atom, a halogen atom, an N,N-dialkylamino group, a C_1-C_3 alkoxy group or a hydroxyl group that is free or esterified by an amino acid;

· R_3 is a hydrogen atom, a halogen atom, a C_1-C_4 alkyl group, a C_1-C_4 alkoxy group, a hydroxyl group, a phenyl group or a benzyl group; and

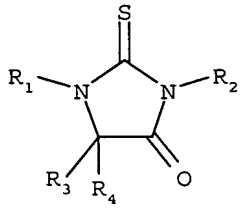
· R_4 is a hydrogen atom, a halogen atom or a C_1-C_4 alkyl group,

with the proviso that at least one of the substituents R_1 and R_2 comprises in its structure 2 aromatic rings selected from phenyl and pyridinyl groups, or is the dibenzofuranyl group; and

b) addition salts of the compounds of formula (I) with a non-toxic acid if said compounds of formula (I) comprise a salifiable basic group.

3. Compound according to claim 2, characterized in that it is selected from:

a) compounds of the formula



(I)

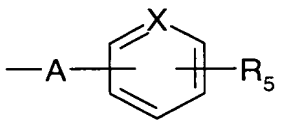
in which

· R_1 is

- a C_3-C_4 alkenyl group,
- a dibenzofuranyl group, or
- a group $(CH_2)_n$-Ar in which

n is 0 or 1, and

Ar is a phenyl or pyridinyl aromatic ring that is unsubstituted or substituted by one or more atoms or groups of atoms selected from halogens, C_1-C_4 alkyl, nitro, C_1-C_3 alkoxy, C_3-C_4 alkoxyalkyl and the group



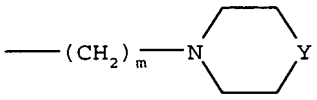
in which

A is O or S,

X is C or N, and

R_5 is a hydrogen atom, a halogen atom, an N,N-di(C_1-C_3)alkylamino group, a C_1-C_3 alkoxy group or a hydroxyl group that is free or esterified by an amino acid;

- R_2 is
  - a C_1-C_5 alkyl group,
  - a C_3-C_4 alkenyl group,
  - a C_2-C_3 hydroxyalkyl group,
  - a C_3-C_5 alkoxyalkyl group,
  - a CH_2-$COOCH_3$ group,
  - a group N,N-di(C_1-C_3)alkylamino(C_1-C_3)alkyl,
  - a group

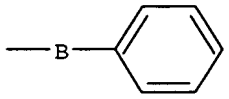


in which m is 2 or 3 and Y is O or N-CH_3, or

  - a group $(CH_2)_p$-Ar in which

p is 0 or 1, and

Ar is a phenyl or pyridinyl aromatic ring that is unsubstituted or substituted by one or more atoms or groups of atoms selected from halogens, C_1-C_4 alkyl, hydroxyl, nitro, C_1-C_3 alkoxy, methylenedioxy, ester, trifluoromethyl, trifluoromethoxy, cyano, morpholinyl and the group



in which

B is O or S;

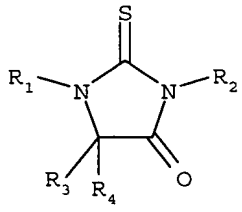
· R_3 is a hydrogen atom, a halogen atom, a C_1-C_4 alkyl group, a C_1-C_4 alkoxy group, a hydroxyl group, a phenyl group or a benzyl group; and

· R_4 is a hydrogen atom, a halogen atom or a C_1-C_4 alkyl group,

with the proviso that at least one of the substituents R_1 and R_2 comprises in its structure 2 aromatic rings selected from phenyl and pyridinyl groups, or R_1 is the dibenzofuranyl group; and

b) addition salts of the compounds of formula (I) with a non-toxic acid if said compounds of formula (I) comprise a salifiable basic group.

4. Compound derived from 2-thiohydantoin, characterized in that it is selected from the compounds of formula (I):



(I)

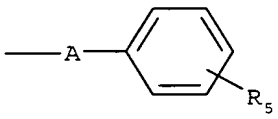
in which

· R_1 and R_2 independently of one another are

- a C_1-C_5 alkyl group,
- a C_3-C_4 alkenyl group, or
- a group $-(CH_2)_n$-Ar in which

n is 0 or 1, and

Ar is a phenyl ring that is unsubstituted or substituted by one or more atoms or groups of atoms selected from halogens, C_1-C_4 alkyl, nitro, C_1-C_3 alkoxy, methylenedioxy, carboxyl or alkoxy(C_1-C_4)carbonyl, and



in which

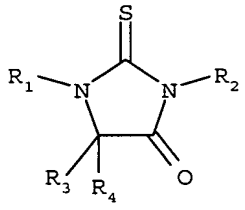
A is CH_2O or OCH_2, and

R_5 is a hydrogen atom, a halogen atom, a C_1-C_4 alkyl group, a C_1-C_3 alkoxy group or a carboxyl or alkoxy(C_1-C_4)carbonyl group; and

· R_3 and R_4 each independently are a hydrogen atom or a C_1-C_4 alkyl group,

with the proviso that at least one of the substituents R_1 and R_2 comprises 2 aromatic rings in its structure.

5. Compound according to claim 4, characterized in that it is selected from the compounds of formula (I):



(I)

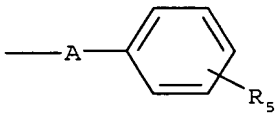
in which

· R_1 is

- a C_3-C_4 alkenyl group, or
- a group -$(CH_2)_n$-Ar in which

n is 0 or 1, and

Ar is a phenyl ring that is unsubstituted or substituted by one or more atoms or groups of atoms selected from halogens, C_1-C_4 alkyl, nitro, C_1-C_3 alkoxy, carboxyl or alkoxy(C_1-C_4)carbonyl, and



in which

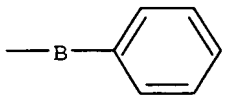
A is CH_2O or OCH_2, and

R_5 is a hydrogen atom, a halogen atom, a C_1-C_4 alkyl group, a C_1-C_3 alkoxy group or a carboxyl or alkoxy(C_1-C_4)carbonyl group;

· R_2 is

- a C_1-C_5 alkyl group,
- a C_3-C_4 alkenyl group, or
- a group -Ar in which

Ar is a phenyl ring that is unsubstituted or substituted by one or more atoms or groups of atoms selected from halogens, C_1-C_4 alkyl, nitro, C_1-C_3 alkoxy, methylenedioxy, carboxyl or alkoxy(C_1-C_4)carbonyl, and



in which

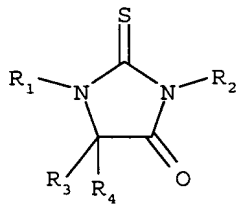
B is CH_2O or OCH_2; and

· R_3 and R_4 each independently are a hydrogen atom or a C_1-C_4 alkyl group,

with the proviso that at least one of the substituents R_1 and R_2 comprises 2 aromatic rings in its structure.

6. Compound derived from 2-thiohydantoin, characterized in that it is selected from:

a) the compounds of formula (I):



(I)

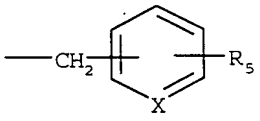
in which

· R_1 and R_2 independently of one another are

- a C_1-C_5 alkyl group,
- a C_3-C_4 alkenyl group,
- a C_2-C_3 hydroxyalkyl group or one of its precursors,
- a C_3-C_5 alkoxyalkyl group, or
- a group $(CH_2)_p$-Ar in which

p is 0 or 1, and

Ar is a phenyl or pyridinyl aromatic ring that is unsubstituted or substituted by one or more atoms or groups of atoms selected from halogens, hydroxyl, nitro, cyano, C_1-C_3 alkoxy, carboxyl, alkoxy(C_1-C_4)-carbonyl, methylthio, methylenedioxy and



in which

X is CH or N, and

R_5 is a hydrogen atom, a halogen atom, a C_1-C_3 alkoxy group or a hydroxyl group; and

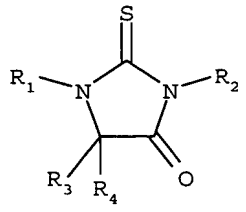
· R_3 and R_4 each independently are a hydrogen atom or a C_1-C_4 alkyl group,

with the proviso that at least one of the substituents R_1 and R_2 comprises in its structure 2 aromatic rings selected from phenyl and pyridinyl groups; and

b) addition salts of the compounds of formula (I) with a non-toxic acid if said compounds of formula (I) comprise a salifiable basic group.

7. Compound according to claim 6, characterized in that it is selected from:

a) the compounds of formula (I):



(I)

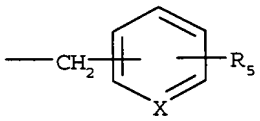
in which

· R_1 is

- a C_3-C_4 alkenyl group, or
- a group $(CH_2)_n$-Ar in which

n is 0 or 1, and

Ar is a phenyl aromatic ring that is unsubstituted or substituted by one or more atoms or groups of atoms selected from halogens, C_1-C_3 alkoxy, nitro and the group



in which

X is CH or N, and

R_5 is a hydrogen atom, a halogen atom, a C_1-C_3 alkoxy group or a hydroxyl group;

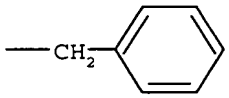
· R_2 is

- a C_1-C_5 alkyl group,
- a C_3-C_4 alkenyl group,
- a C_2-C_3 hydroxyalkyl group or one of its precursors,
- a C_3-C_5 alkoxyalkyl group, or
- a group $(CH_2)_p$-Ar in which

p is 0 or 1, and

Ar is a phenyl or pyridinyl aromatic ring that is unsubstituted or

substituted by one or more atoms or groups of atoms selected from halogens, hydroxyl, nitro, cyano, C_1-C_3 alkoxy, carboxyl, alkoxy(C_1-C_4)-carbonyl, methylthio, methylenedioxy and



and

R_3 and R_4 each independently are a hydrogen atom or a C_1-C_4 alkyl group,

with the proviso that at least one of the substituents R_1 and R_2 comprises in its structure 2 aromatic rings selected from phenyl and pyridinyl groups; and

b) addition salts of the compounds of formula (I) with a non-toxic acid if said compounds of formula (I) comprise a salifiable basic group.

8. Compound according to claim 1, characterized in that one of the radicals R_1 or R_2 is the phenoxyphenyl, phenylthiophenyl, (phenylmethoxy)phenyl or (phenylmethyl)phenyl group and the radicals R_3 and R_4 and the other radical R_1 or R_2 are as defined in claim 1 or 2.

9. Compound according to claim 2 or 3, characterized in that one of the radicals R_1 or R_2 is the phenoxyphenyl or phenylthiophenyl group and the radicals R_3 and R_4 and the other radical R_1 or R_2 are as defined in claim 2 or 3.

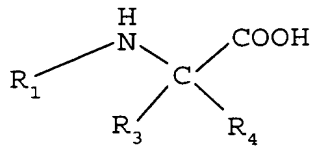
10. Compound according to claim 4 or 5, characterized in that one of the radicals R_1 or R_2 is the phenoxyphenyl, phenylthiophenyl, (phenylmethoxy)phenyl or (phenylmethyl)phenyl group and the radicals R_3 and R_4 and the other radical R_1 or R_2 are as defined in claim 4 or 5.

11. Compound according to claim 6 or 7, characterized in that one of the radicals R_1 or R_2 is the phenoxyphenyl, phenylthiophenyl, (phenylmethoxy)phenyl or (phenylmethyl)phenyl group and the radicals R_3 and R_4 and the other radical R_1 or R_2 are as defined in claim 6 or 7.

12. Compound of formula (I) according to any one of claims 1 to 4, characterized in that R_3 is a methyl group and R_4 is a hydrogen atom or a methyl group.

13. Process for the preparation of a compound of formula (I) according to any one of claims 1 to 12, characterized in that it comprises steps which consist in:

a) reacting an acid of the formula



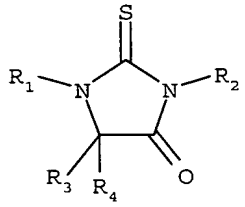
(II)

in which R_1 and R_4 are as defined above in claim 1 and R_3 is H, C_1-C_4 alkyl, phenyl or benzyl,

with an isothiocyanate of formula (III):

$$R_2\text{-}N{=}C{=}S \quad \text{(III)}$$

in which R_2 is a group as defined above in claim 1, in a solvent, at a temperature between 20°C and the boiling point of the solvent, in the presence of a base, for 1 to 20 hours, to give the compound of formula (I):



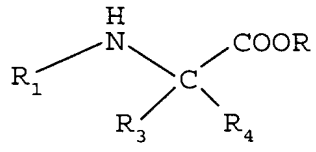
(I)

in which R_1, R_2, R_3 and R_4 are as defined for the starting materials; and

b) if necessary, if the compound of formula (I) obtained above contains a salifiable basic group such as an amine, reacting said compound with a mineral or organic acid, in an anhydrous solvent, to give the salt of the compound of formula (I).

14. Process for the preparation of a compound of formula (I) according to any one of claims 1 to 12, characterized in that it consists in:

a) reacting an ester of formula (IV):

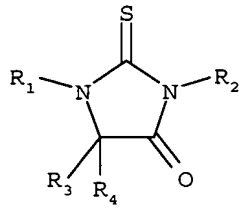


(IV)

in which R_1 and R_4 are as defined in claim 1, R_3 is H, C_1-C_4 alkyl, phenyl or benzyl and R is a C_1-C_4 alkyl group, preferably a methyl, ethyl or isopropyl group, with an isothiocyanate of formula (III):

R_2-N=C=S (III)

the reaction being carried out in a solvent, in the presence of a weak acid, at a temperature between 80°C and the boiling point of the solvent, for 0.5 to 5 hours, to give the compound of formula (I):



(I)

in which

R_1, R_2, R_3 and R_4 are as defined for the starting compounds; and

b) if necessary, in the case where the compound of formula (I) comprises a salifiable basic group, reacting said compound with an acid to give the corresponding salt.

15. Pharmaceutical composition, characterized in that it contains at least one compound of formula (I) according to any one of claims 1 to 12 in association with at least one physiologically acceptable excipient.

16. Compound of formula (I) or one of its addition salts with a pharmaceutically acceptable acid, according to any one of claims 1 to 12, as a pharmacologically active substance.

17. Use of a compound of formula (I) or one of its addition salts with a pharmaceutically acid, according to any one of claims 1 to 12, in the preparation of a drug for the treatment of diabetes and diseases due to hyperglycemia.

18. Use of a compound of formula (I) or one of its addition salts with a pharmaceutically acid, according to any one of claims 1 to 12, in the preparation of a drug for the treatment of hypertriglyceridemia and dyslipidemia.

19. Use of a compound of formula (I) or one of its addition salts with a pharmaceutically acid, according to any one of claims 1 to 12, in the preparation of a drug for the treatment of obesity.

20. Use of a compound of formula (I) or one of its addition salts with a pharmaceutically acceptable acid, according to any one of claims 1 to 12, in the preparation of a drug for the treatment of cerebral vascular accidents.